

LOW POWER, LOW NOISE BAND-GAP CIRCUIT  
USING SECOND ORDER CURVATURE CORRECTION

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ABSTRACT OF THE DISCLOSURE

A band-gap reference circuit comprising a first current source for generating a first reference current and a first circuit branch for receiving part of the first reference current.

10      The first circuit branch comprises a first resistor having a positive temperature coefficient in series with a base-emitter junction of a first PNP diode having a negative temperature coefficient. An emitter current of the first PNP diode develops a first combined voltage across the first resistor and the base-emitter junction. A comparison circuit compares the first combined voltage to a base-emitter voltage of a second PNP diode and adjusts a band-gap reference voltage. A correction current generating circuit injects a correction current into an emitter of the second PNP diode that at least partially offsets a non-linear drop-off in the band-gap reference voltage caused by the second PNP diode as temperature increases..